

CLAIMS

1.- Device (16) for measuring at least one component of a magnetic field comprising a magnetoresistive or magnetoinductive sensor (102) and a measurement chain (28), one input of which is connected to the magnetoresistive or magnetoinductive sensor (102) and the output of which is able to provide a piece of information representative of the magnetic field in the region of the sensor, characterised in that the measurement chain (28) comprises means (138 ; 178 ; 198) for isolating a frequency component of the signal from the sensor representative of the magnetic field for a single predetermined frequency (FI).

2.- Measurement device according to claim 1, characterised in that it comprises an alternating power supply generator (116) for the magnetoresistive or magnetoinductive sensor (102) at an excitation frequency (f), and in that the excitation frequency (f) is greater than or equal to the predetermined frequency (FI) of the frequency component to be isolated.

3.- Measurement device according to claim 1 or 2, characterised in that the measurement chain (28) comprises a band-pass filter (138) which is configured so as to isolate only the frequency component at the single predetermined frequency (FI) of the signal from the sensor representative of the magnetic field.

4.- Measurement device according to claim 3, characterised in that the band-pass filter (138) comprises an operational amplifier (130).

5.- Measurement device according to claim 1 or 2, characterised in that the measurement chain (28) comprises a generator for a reference signal whose frequency (F) is greater than or equal to the single predetermined frequency (FI) of the frequency component to isolate, and in that it comprises a multiplier (180, 210) which is able to bring about a multiplication of the signal from the sensor and the reference signal.

6.- Measurement device according to claim 5, characterised in that the multiplier (180) is suitable for carrying out an analogue multiplication of the two signals.

7.- Measurement device according to claim 5, characterised in that the measurement chain (24) comprises two analogue/digital converters (206, 208) which are able to bring about a conversion of the signal from the sensor and the reference signal, as well as a digital processor (210) which is able to
5 bring about the multiplication of the two digital signals from the analogue/digital converters (206, 210).

8.- Device for analysing a magnetic field produced by a circuit during operation comprising means (14) for exciting the circuit at a predetermined excitation frequency (FC) and a measurement device (16) according to any
10 one of the preceding claims, characterised in that the single predetermined frequency (FI) of the frequency component to be isolated is equal to the excitation frequency (FC) of the circuit.